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MODEL OF AIRCRAFT FOR TESTING IN A WIND TUNNEL(U)
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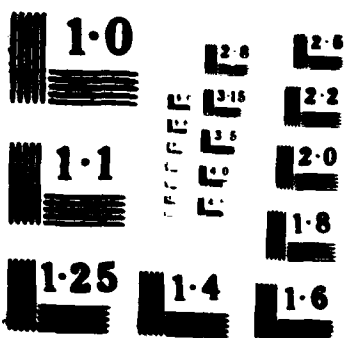
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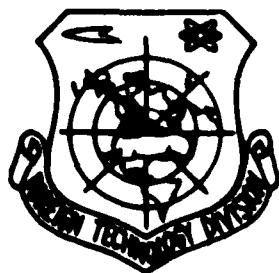
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MODEL OF AIRCRAFT FOR TESTING IN A WIND TUNNEL

by

N. F. Sterlikov, L. V. Novikov



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HUMAN TRANSLATION

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U. S. BOARD ON GEOGRAPHIC NAMES transliteration SYSTEM

Block	Italic	Transliteration	Block	Italic	Transliteration
А а	<i>А а</i>	A, a	Р р	<i>Р р</i>	R, r
Б б	<i>Б б</i>	B, b	С с	<i>С с</i>	S, s
В в	<i>В в</i>	V, v	Т т	<i>Т т</i>	T, t
Г г	<i>Г г</i>	G, g	У у	<i>У у</i>	U, u
Д д	<i>Д д</i>	D, d	Ф ф	<i>Ф ф</i>	F, f
Е е	<i>Е е</i>	Ye, ye; E, e*	Х х	<i>Х х</i>	Kh, kh
Ж ж	<i>Ж ж</i>	Zh, zh	Ц ц	<i>Ц ц</i>	Ts, ts
З з	<i>З з</i>	Z, z	Ч ч	<i>Ч ч</i>	Ch, ch
И и	<i>И и</i>	I, i	Ш ш	<i>Ш ш</i>	Sh, sh
Й й	<i>Й й</i>	Y, y	Щ щ	<i>Щ щ</i>	Shch, shch
К к	<i>К к</i>	K, k	Ъ ъ	<i>Ъ ъ</i>	"
Л л	<i>Л л</i>	L, l	Ы ы	<i>Ы ы</i>	Y, y
М м	<i>М м</i>	M, m	Ь ь	<i>Ь ь</i>	'
Н н	<i>Н н</i>	N, n	Э э	<i>Э э</i>	E, e
О о	<i>О о</i>	O, o	Ю ю	<i>Ю ю</i>	Yu, yu
П п	<i>П п</i>	P, p	Я я	<i>Я я</i>	Ya, ya

*ye initially, after vowels, and after Ъ, Ь; e elsewhere.
When written as ѣ in Russian, transliterate as yě or ě.

RUSSIAN AND ENGLISH TRIGONOMETRIC FUNCTIONS

Russian	English	Russian	English	Russian	English
sin	sin	sh	sinh	arc sh	sinh ⁻¹
cos	cos	ch	cosh	arc ch	cosh ⁻¹
tg	tan	th	tanh	arc th	tanh ⁻¹
ctg	cot	cth	coth	arc cth	coth ⁻¹
sec	sec	sch	sech	arc sch	sech ⁻¹
cosec	csc	csch	csch	arc csch	csch ⁻¹

Russian English

rot curl
lg log



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MODEL OF AIRCRAFT FOR TESTING IN A WIND TUNNEL

N. F. Sterlikov, L. V. Novikov

We know about models of aircraft intended for determining the pressure on their surface during tests in a wind tunnel. Drainage channels are made in the body of the aircraft, as well as a cavity which is connected by a pipe with a compressed air source and a liquid source, e.g., colored, during the experiment. In this case, the drainage channels are withdrawn into the cavity of the model.

The problem with this model is the low precision of determining the pressure distribution over the model, especially when its shape is complex.

In order to build a simple device for automatically determining the pressure on the surface of the model at any point with high precision, annular electrodes are made on the outer surface of the model's body. They are connected with drain channels and they are electrically connected with one pole of an emf element, whose other pole is connected with an electrode placed in the inner cavity of the body with an electrically conductive liquid.

The figure shows a schematic diagram of the proposed model.

The model contains body 1, made from an insulating material, with drain channels 2 and internal cavity 3, which is withdrawn into it.

During the experiment, this cavity is connected by pipe 4 with a source of conductive liquid 5 and compressed air 6. The drain channels on the outer surface of the model terminate in annular electrodes 7, which are electrically connected with moving-coil galvanometers 8 and emf element 9. The electrode 10 of the inner cavity is connected with the other pole of the emf element.

The device operates as follows: compressed air is used to force the current-conducting liquid from the tank through the pipe into the inner cavity of the model body, and it comes into contact with the electrode 10. As the compressive pressure continues to increase, the liquid moves through the drain channels, and when it reaches the outer surface of the body, the emf-galvanometer - annular electrode circuit is shorted.

The compressive pressure is varied according to a known law, e.g., an exponential law.

Subject of Invention

This invention is the model of an aircraft for testing in a wind tunnel. Its housing contains drain channels which are withdrawn into the inner cavity of the model's body, which is connected by a pipe with a source of liquid and a source of compressed air. It is different because in order to increase the precision of the experiment, annular electrodes are made in the drain channels on the outer surface of the model's body. These electrodes are electrically connected with one pole of the emf element, the other pole of which is connected with an electrode placed in the inner cavity of the body, which is filled with an electrically conductive liquid.

to the electrodes →

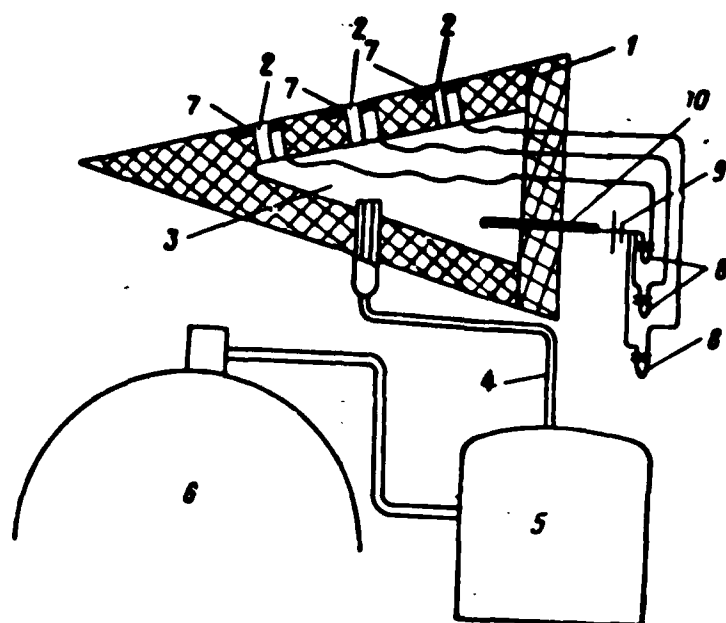


Figure.

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